

# EXHIBIT D

# HONEYWELL ABBREVIATION & ACRONYM DICTIONARY

- = Honeywell term

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## A

**AAIB** - Air Accident Investigation Branch: British equivalent of NTSB

**a/c** - aircraft

**AC** - Advisory Circular

**a/l** - airline

**ACARS** - Aircraft Communications Addressing and Reporting System

**ACAS** - Aircraft Collision Avoidance System

**AD** - Airworthiness Directive: FAA regulatory notice

**A/D** - Analog-to-Digital

**Ada** - A higher order programming language developed during the 1970s for the DOD (note: not an acronym, named for first computer programmer, Ada Augusta Byron)

**ADC** - Air Data Computer

**ADF** - Automatic Direction Finder: a navigation receiver

**ADI** - Attitude Director Indicator

**ADIRS** - Air Data Inertial Reference System\*

**ADIRU** - Air Data Inertial Reference Unit\*

**ADM** - Air Data Module

**ADR** - Air Data Reference

**ADS** - Air Data System

**ADS** - Automatic Dependent Surveillance: a potential feature for a/c position reporting, e.g., via SATCOM

**ADS-B** - ADS-Broadcast

**ADT** - Air Data Tester

**AEEC** - Airlines Electronic Engineering Committee

**AES** - Aircraft Earth Station

**AFCS** - Automatic Flight Control System

**AFIS** - Airborne Flight Information Service

**AFMS** - Advanced Flight Management System\*

**AFS** - Auto Flight System: MD-11, integrates autopilot, CAT II flight director and autothrottle functions\*

**AGL** - above ground level

**AHRS** - Attitude-Heading Reference System

**AHS** - American Helicopter Association

**AIA** - Aerospace Industries Association

**AIAA** - American Institute of Aeronautics and Astronautics

**AIM** - Airman's Information Manual

**AIMS** - Airplane Information Management System (Boeing 777)

**ALPA** - Airline Pilots Association

**ALT** - altitude

**ALTN** - alternate (airport)

**AM** - Amplitude Modulation

**AMC** - Avionics Maintenance Conference

**AMD** - Advisory Map Display\*

**AMI** - Airline Modifiable Information\*

**AMLCD** - Active Matrix Liquid Crystal Display

**AMOSS** - Airline Maintenance and Operation Support System  
**AMSS** - Aeronautical Mobile Satellite Service  
**ANSI** - American National Standards Institute  
**ANSIR** - Advanced Navigation System Inertial Reference\*  
**ANP** - Actual Navigation Performance  
**AOA** - angle-of-attack  
**AOG** - Aircraft-On-Ground  
**AOPA** - Aircraft Owners and Pilots Association  
**A/P** - Autopilot  
**APU** - Auxiliary Power Unit  
**ARINC** - Aeronautical Radio, Incorporated: a nonprofit corporation owned by member airlines to define form, fit and function of avionics equipment  
    **ARNIC 429** - standard for broadcast digital information transfet systems for general applications  
    **ARNIC 561** - Inertial navigation system specifications  
    **ARNIC 571** - Inertial sensor attitude-heading reference system specifications  
    **ARNIC 575** - Digital air data system specifications  
    **ARNIC 700-series** - All-digital equipment specifications for new-generation transport category aircraft  
**ARSA** - Airport Radar Service Area  
**ASC** - Aircraft System Controllers: MD-11, computers and control panels which automate many of the flight engineer control/monitoring functions from the DC-10  
**ASCB** - Avionics Standard Communication Bus  
**ASCII** - American Standard for Information Exchange  
**ASE** - Airline-Selected Equipment\*: vs. SFE; see also, BFE  
**ASI** - Airspeed Indicator  
**ASIC** - Application-Specific Integrated Circuit  
**ASL** - above sea level  
**\*A-SMGCS** - Advanced Surface Movement Guidance and Control System (Airport Systems)  
**ASME** - American Society of Mechanical Engineers  
**ASRS** - Aviation Safety Reporting System  
**A/T** - autothrottle  
**ATA** - Air Transport Association  
**ATC** - air traffic control  
**ATCRBS** - Air Traffic Control Radar Beacon System  
**ATE** - Automatic Test Equipment: e.g., the STS-1000  
**ATI** - Air Transport Indicator: standard case sizes ranging nominally from 2ATI - 6ATI  
**ATLAS** - Abbreviated Test Language for Avionics Systems  
**ATM** - Air Traffic Management  
**ATN** - Aeronautical Telecommunications Network  
**ATR** - Air Transport Radio: ARINC form-factor/standard case dimensions; 1 ATR = 8 MCU (also, Austin Trumbull Radio standard design)  
**ATS** - Air Traffic Services  
**ATS** - Air Transport Systems\*  
**AUSRIRE** - All Union Scientific Research Institute of Radio Equipment: CIS (former Soviet) agency  
**AWLU** - Aircraft Wireless LAN Unit  
**AZ** - azimuth: angular measurement in horizontal plane

**B**

**BAe** - British Aerospace  
**BCA** - Boeing Commercial Airplanes  
**BCAS** - Business and Commuter Aviation Systems\*  
- Beacon Collision Avoidance System: forerunner of TCAS  
**BEA** - Bureau d'Enquetes Accidents: French equivalent of NTSB  
**BFE** - Buyer-Furnished Equipment: not supplied as standard equipment by airframe mfg; selected by customer (see ASE)  
**BIT** - Built-in Test  
**BITE** - Built-in Test Equipment  
**BPS** - Bits Per Second  
**B-NAV** - Basic Area Navigatin: concept of easing congestion in European airways by requiring aircraft to be fitted with equipment that will allow more direct routings by ATC

**C**

**CAA** - Civil Aviation Authority (U.K. and other countries)  
**CAB** - Civil Aeronautics Board  
**CAD/CAM** - Computer Aided Design/Computer Aided Manufacture  
**CADC** - Central Air Data Computer: an analog system  
**CAS** - Calibrated Airspeed  
- Commercial Aviation Systems\*  
**CAS-SPO** - Commercial Aviation Systems-Sensor Products Operation\*  
**CAT** - clear air turbulence: high altitude turbulence encountered where no clouds are present, (but coffee usually is.)  
**CAT I** - Category I flight conditions: allows operation down to a 200 ft. decision height (DH) and with runway visual range not less than 2600 ft.  
**CAT II** - Category II flight conditions: procedure which provides for approach to height above touchdown not less than 100 ft., runway visual range not less than 1200 ft.  
**CAT IIIA** - Category IIIA flight conditions: no decision height minimum, runway visual range not ss than 700 ft.  
**CAT IIIB** - Category IIIB flight conditions: no decision height minimum, runway visual range not less than 150 ft.  
**CCA** - Circuit Card Assembly  
**CDI** - Course Deviation Indicator  
**CD-ROM** - Compact Disc-Read Only Memory  
**CDS** - Common Display System\*  
**CDU** - Control-Display Unit: part of FMS  
**CFDS** - Centralized Fault Display System (MD-11)\*  
**CFIT** - Controlled Flight Into Terrain  
**CG** - Center of Gravity  
**CMC** - Central Maintenance Computer  
**CMOS** - Complementary Metal Oxide Semiconductor  
**CMU** - Communications Management Unit  
**CNS/ATM** - Communication, Navigation, Surveillance/Air Traffic Management (supersedes "FANS" terminology)  
**COTS** - Commercial Off-The-Shelf  
**CPA** - Closest Point of Approach (TCAS)  
**C/PDLC** - Controller/Pilot Data Link Communications

**CRM** - Cockpit Resource Management or Crew Resource Management (the latter term has tended to displace former, recognizing a broader scope of the concept)  
**CRT** - Cathode Ray Tube: display unit  
**CTO** - Central Technical Operations\*  
**CVR** - Cockpit Voice Recorder

## D

**D/A** - Digital-to-Analog Conversion  
**DAC** - Douglas Aircraft Company (unit of McDonnell Douglas)  
**DADC** - Digital Air Data Computer  
**DASA** - Deutsche Aerospace (German aerospace organization)  
**dB** - decibel: acoustic measurement unit  
**DDRMI** - Digital Distance Radio Magnetic Indicator\*  
**DEU** - Display Electronics Unit  
**DFDAU** - Digital Flight Data Acquisition Unit  
**DFDR** - Digital Flight Data Recorder  
**DFGC** - Digital Flight Guidance Computer\*  
**DFGS** - Digital Flight Guidance System\*  
**DG** - Directional Gyro  
**DGAC** - Direction Generale de l'Aviation Civile -- French certifying authority, equivalent of FAA  
**DGPS** - Differential GPS  
**DH** - Decision Height  
**DME** - Distance Measuring Equipment  
**DO** - Dornier  
**DOT** - Department of Transportation (U.S.)  
**DR** - deduced reckoning  
**DRAM** - Dynamic Random Access Memory  
**DU** - Display Unit  
**DUATS** - Direct User Access Terminal System

## E

**EADI** - Electronic Attitude Direction Indicator (see ADI)  
**EBDBDBD** - "That's All Folks"  
**EEPROM** - Electrically Erasable Programmable Read-Only Memory  
**EFIS** - Electronic Flight Instrument System  
**EHSI** - Electronic Horizontal Situation Indicator (see HSI)  
**EIA** - Electronic Industries Association  
**EICAS** - Engine Indication and Crew Alerting System  
**EIS** - Electronic Instrument System (MD-11)\*  
**ELF/FL** - Elevator Load Feel/Flap Limiter  
**ELS** - Electronic Library System\*  
**EMI** - Electromagnetic Interference  
**EPR** - Engine Pressure Ratio  
**EPROM** - Erasable Programmable Read-Only Memory  
**EPRT** - Engine Pressure Ratio Transmitter

**EROPS** - Extended Range Operations  
**ETA** - Estimated Time of Arrival  
**ETE** - Estimated Time Enroute  
**ETP** - Equal Time Point: halfway there, by time  
**ETOPS** - Extended Twin-engine Operations

## **F**

**FAA** - Federal Aviation Administration (U.S.)  
**FADEC** - Full Authority Digital Engine (or, Electronic) Control  
**FAMIS** - Full Aircraft Management/Inertial System\*: FMS/IRS upgrade package for widebodies -- no longer offered  
**FANS** - Future Air Navigation System (ICAO-endorsed worldwide navigation plan -- the term "CNS/ATM" is now preferred)  
**FAR** - Federal Aviation Regulations  
**FBO** - Fixed-Base Operator  
**FBL** - Fly-by-light  
**FBW** - Fly-by-wire  
**FBN** - Fly-by-night  
**FCC** - Federal Communications Commission (U.S.)  
-Flight Control Computer  
**FCS** - Flight Control System  
**FD** - Flight Director  
**FDAU** - Flight Data Acquisition Unit  
**FDMU** - Flight Data Management Unit: FAMIS component  
**FDR** - Flight Data Recorder  
**FGS** - Flight Guidance System  
**FL** - Flight Level: measured in hundreds of ft. (above 18,000 ft.)  
**FLIR** - Forward Looking Infra-Red (radar)  
**FM** - Frequency Modulation  
**FMC** - Flight Management Computer  
**FMCDU** - Flight Management Control and Display Unit (FMS)  
**FMCS** - Flight Management Computer System  
**FMGC** - Flight Management Guidance Computer  
**FMGEC** - Flight Management Guidance Envelope Computer  
**FMS** - Flight Management System  
**F/O** - First Officer  
**FOD** - Foreign Object Damage  
**FOG** - Fiber Optic Gyro (see IFOG)  
**FQIS** - Fuel Quantity Indicating System\*  
**FSC** - Fuel System Controller  
**FT/ADIRS** - Fault Tolerant/Air Data Inertial Reference System\* (777)

## **G**

**GA** - general aviation: aviation operations other than military and airlines (e.g., corporate, agricultural, personal, flying clubs/schools)  
**GATM** - Global Air Traffic Management (military version of CNS-ATM concept)

**GATT** - General Agreement on Trade and Tariffs  
**GBST** - Ground-Based Software Tool  
**GCP** - Glareshield Control Panel  
**GDAP** - Growing Danger of Acronym Proliferation  
**GES** - Ground Earth Station (SATCOM term)  
**GIE** - Groupment d'Intirjt Economique: French corporate entity, grouping of mutual economic interests (e.g. Airbus)  
**GLONASS** - Global Orbiting Navigation Satellite System: CIS satellite navigation system version of GPS  
**GLS** - GPS Landing System  
**GLU** - GPS Landing Unit: provides precision of GPS guidance to the runway in Cat III operations  
**GMT** - Greenwich Mean Time: used in navigation systems; Zulu  
**GNS** - Global Navigation System (like GPS, but broader -- now the preferred term by Honeywell)  
**GNSS** - Global Navigation Satellite System  
**GNSSU** - Global Navigation Satellite Sensor Unit (the GNS receiver component of a GNS)\*  
**GO/NG** - Go/No Go  
**GPIRS** - Global Positioning/Inertial Reference System\*  
**GPS** - Global Positioning System (see GNS)  
**GPSSU** - Global Positioning System Sensor Unit\*  
**GPWS** - Ground Proximity Warning System  
**GS** - Groundspeed  
**G/S** - Glide Slope

## H

**HAI** - Helicopter Association International  
**HERF** - High-Energy Radio Frequency or High-Energy Radiated Fields: dense electromagnetic fields created by radio/TV transmitters -- possible source of interference for electronic instruments  
**HF** - High Frequency: 3-30 MHz  
**HFDL** - High Frequency Data Link  
**HIRF** - High Intensity Radiated electromagnetic Frequencies (see also, HERF)  
**HMCPU** - Hybrid Multifunction Control-Display Unit: (757/767)\*  
**HPA** - High Power Amplifier - SATCOM component  
**HSI** - Horizontal Situation Indicator  
**HUD** - Head-up Display  
**HW** - hardware  
**Hz** - Hertz: cycles per second

## I

**IAC** - Integrated Avionics Computer\*  
**IAS** - Indicated Airspeed  
**IATA** - International Air Transport Association: economic association of commercial airlines  
**ICAO** - International Civil Aviation Organization: agency of the UN  
**IDENT** - Identification

**IEEE** - Institute of Electrical and Electronics Engineers  
**IFALPA** - International Federation of Airline Pilots Association  
**IFE** - In-flight entertainment  
**IFOG** - Interferometric Fiber Optic Gyro (see FOG)  
**IFR** - Instrument Flight Rules: see IMC  
**II** - Ilyushin Design Bureau  
**ILS** - Instrument Landing System  
**IM** - Inner Marker (glideslope)  
**IMA** - Integrated Modular Avionics (see AIMS)  
**IMC** - Instrument Meteorological Conditions (see IFR)  
**Inmarsat** - International Maritime Satellite Organization -- international cooperative of more than 50 countries that operates a global system of satellites for mobile communications, such as SATCOM.  
**INS** - Inertial Navigation System  
**I/O** - Input/Output  
**IPTN** - Industri Pesawat Terbang Nusantara -- Indonesia's state-owned aerospace manufacturer  
**IR** - Infrared  
**IRS** - Inertial Reference System  
**IRU** - Inertial Reference Unit: part of IRS  
**ISA** - Inertial Sensor Assembly - part of IRS  
-International Standard Atmosphere  
**ISDU** - Inertial System Display Unit  
**ISO** - International Standards Organization  
**IVSI** - Instantaneous Vertical Speed Indicator

## J

**JAA** - (European) Joint Airworthiness Authority -- founded in 1970 to develop unified European approach to aviation safety; represents 27 European countries. (See also, JAR.)  
**JAR** - Joint Airworthiness Requirement -- issued by JAA

## K

**K** - thousand  
**KHz** - KiloHertz  
**KIAS** - Indicated Airspeed in Knots  
**KT** - Knots: nautical miles/hour

## L

**LAAS** - Local Area Augmentation System  
**LADGPS** - Local area differential GPS  
**LAN** - Local Area Network  
**LASER** - Light Amplification by Stimulated Emission of Radiation  
**LAT** - latitude



**LCD** - Liquid Crystal Display  
**LED** - Light-Emitting Diode  
**LEO** - Low Earth Orbit  
**LIDAR** - Light Detection and Ranging  
**LIP** - Limited Installation Program (e.g. TCAS)  
**LLWAS** - Low-Level Wind Shear Alert System  
**LNAV** - Lateral Navigation  
**LOC** - Localizer: part of Instrument Landing System  
**LORAN** - Long-Range Navigation: electronic pulse system for oceanic navigation  
**Loran-C** - a hyperbolic grid navigation system  
**LRU** - Line-Replaceable Unit  
**LRM** - Line-Replaceable Module  
**LSAS** - Longitudinal Stability Augmentation System (MD-11)  
**LSI** - Large Scale Integration  
**LSRRTI** - Leningrad Scientific Research Radio Technical Institute: Soviet agency  
**LSS** - Lightning Sensor System\*

## **M**

**mb** - millibars  
**M** - Mach number: speed of a/c expressed in relation to speed of sound  
**M** - million; mega  
**MAC** - Mean Aerodynamic Chord  
**MASI** - Mach Airspeed Indicator  
**MAPPER** - Maintaining, Preparing & Producing Executive Reports\*  
**MAU** - Modular Avionics Unit\*  
**MCA** - Ministry of Civil Aviation (former USSR)  
**MCDU** - Multifunction Control and Display Unit: part of FMS  
**MCP** - Mode Control Panel  
**MCU** - Modular Concept Unit (Spitzer); also defined as Minimum Configuration Unit (BCA Magazine); also, Modular Component Unit  
**MD** - McDonnell Douglas (no hyphen)  
**MDAU** - Maintenance Data Acquisition Unit  
**MEO** - Medium Earth Orbit (satellite)  
**MFD** - Multi-Function Display  
**MHRS** - Magnetic Heading Reference System  
**MHz** - MegaHertz: a whole lot of Hertz  
**MLS** - Microwave Landing System  
**MM** - Middle Marker (glideslope)  
**MMR** - Multi-Mode receiver  
**MNPS** - Minimum Navigation Performance Specifications  
**MOPS** - Minimum Operation and Performance Standards/Minimum Operational Performance Standards  
**MOU** - Memorandum of Understanding (pl: Memoranda)  
**MRI** - Ministry of Radio Industry (USSR)  
**MSL** - Mean Sea Level (datum for altitude measurement)  
**MSU** - Mode Select Unit  
**MTBF** - Mean Time Between Failures  
**MTBR** - Mean Time Between Removals

**MTBUR** - Mean Time Between Unscheduled Removal

**MTU** - Motoren-und Turbinen Union Ludwigfelde GMBH (German engine manufacturer)

## **N**

**N1** - Engine low pressure rotor speed

**NAS** - National Airspace System

**NASA** - National Aeronautics and Space Administration (U.S.)

**NAT** - North Atlantic Tracks

**NAV** - navigation

**NAVAID** - Navigational Aid

**NAVSAT** - navigation satellite

**NBAA** - National Business Aviation Association

**NCD** - No Computed Data

**ND** - Navigation Display

**NDB** - Nondirectional Beacon

-Nav Data Base

**NIH** - Not Invented Here

**NM** - Nautical Mile: 1.15 statute miles or 1000 fathoms or 216,000 barleycorns; 60 nm = 1 degree of Earth's circumference

**NMS** - Navigation Management System

**NMU** - Navigation Management Unit

**NOAA** - National Oceanic and Atmospheric Administration

**NOTAM** - Notice to Airmen

**NPRM** - Notice of Proposed Rule-Making (FAA)

**NTSB** - National Transportation Safety Board (U.S.)

**NWS** - National Weather Service (U.S.)

## **O**

**OAT** - Outside Air Temperature

**OEM** - Original Equipment Manufacturer

**OM** - Outer Marker (glideslope)

**OMS** - On-Board Maintenance System

**ORT** - Owner Requirements Table

## **P**

**PFD** - Primary Flight Display

**PIP** - Product Improvement Program\*

**PIREP** - Pilot Report

**PMAT** - Portable Maintenance Access Terminal

**PMO** - Program Management Organization\*

**PMS** - Performance Management System\*

**PRF** - Pulse Repetition Frequency: pertaining to radar

**PROM** - Programmable Read-Only Memory

**Ps** - Pressure, static: air data measurement  
**psi** - pounds/square inch  
**Pt** - Pressure, total: air data measurement  
**PWB** - Printed wire board

## **Q**

**QFE** - field elevation pressure  
**QNH** - sea level pressure

## **R**

**RA** - Radio Altitude  
- Resolution Advisory (TCAS)  
**RAA** - Regional Airline Association  
**RADAR** - Radio Detection And Ranging  
**RAE** - Royal Aircraft Establishment (Farnborough)  
**RAIM** - Receiver autonomous Integrity Monitoring (GPS)  
**RAM** - Random Access Memory  
**RDDMI** - Radio Digital Distance Magnetic Indicator\*  
**RDI** - Radio Direction Indicator  
**REACT** - Rain Echo Attenuation Compensation Technique: Honeywell weather radar feature\*  
**RF** - radio frequency  
**RFI** - Request For Information  
**RFP** - Request For Proposal  
**RFQ** - Request For Quotation  
**RFU** - Radio Frequency Unit - SATCOM component  
**RHF** - Ridiculously High Frequency  
**RISC** - Reduced Instruction Set Computer  
**RLD** - Rijks Luchtvaart Dienst: Dutch equivalent of FAA  
**RLG** - Ring Laser Gyro  
**RMI** - Radio Magnetic Indicator  
**RMU** - Radio Management Unit  
**RNAV** - Area Navigation  
**RNP** - Required Navigation Performance  
**ROM** - Read-Only Memory  
**RPK** - Revenue Passenger-Kilometers: number of revenue passengers carried times distance in KMs  
**RPM** - Revenue Passenger-Miles (see RPK)  
**RPZ** - Ramensky Priborostroitelny Zavod (Russian avionics manufacturer)  
**R/T** - Receiver/Transmitter  
**RTA** - Required Time of Arrival  
**RTCA** - a private, not-for-profit organization that brings industry and government together to address the needs of the worldwide aeronautical community. The acronym RTCA originally stood for Radio Technical Commission for Aeronautics-- but is now known simply as RTCA  
**RVR** - Runway Visual Range  
**RVMS** - Reduced Vertical Separation Minimums

## **S**

**SA** - Selective Availability -- re GPS  
**SAARU** - Secondary Attitude/Air data Reference Unit\* (777)  
**SAE** - Society of Automotive Engineers  
**SAFEBUS<sup>tm</sup>** - Honeywell-developed ARINC 659 cabinet bus (777)  
**SAIFIR** - Systems Aid for Integration and Fault Reporting (777)  
**SAMPE** - Society for the Advancement of Material and Process Equipment  
**SAR** - Search and Rescue: usually pertaining to weather radars and navigation (BCAS)  
- Some Assembly Required (Sears)  
**SARPS** - Standard and Recommended Practices  
**SAT** - Static Air Temperature  
**SATCOM** - Satellite Communications  
**SC** - Special Committee (RTCA term)  
**SDU** - Satellite Data Unit: SATCOM component  
**SFE** - Seller-Furnished Equipment: i.e., selected by airframe manufacturer as standard for that aircraft type  
**SID** - Standard Instrument Departure  
**SIGMET** - Significant Meteorological Advisory  
**SITA** - Soci t  Internationale de T lcommunications Aeronautiques: cooperative, not-for-profit organization with 400 member companies dedicated to the air transport industry. Operates world's largest specialized data telecommunications network including VHF AIRCOM Service which provides air-ground communications network of ground stations.  
**SITS** - Subsystem Integration and Test Station  
**SLS** - Satellite Landing System\*  
**SMART** - Standard Modular Avionics Repair and Test  
**SMT** - Surface-Mount Technology  
**SRC** - Systems and Research Center\*  
**STAR** - Standard Terminal Arrival Route  
**STC** - Supplemental Type Certificate: FAA certification document  
**STOL** - Short Take-Off and Landing  
**SW** - software

## **T**

**TA** - Traffic Advisory (TCAS)  
**\*TAIS** - Total Aircraft Information System (Aviation Services)  
**\*TAMS** - Total Airport Management System (Airport Systems)  
**TAS** - True Airspeed  
**TAT** - Total Air Temperature  
**TBD** - To Be Determined  
**TCA** - Terminal Control Area  
**TCAS** - Traffic Alert and Collision Avoidance System  
**\*TEMPLE** - Terminal Management and Planning Equipment  
**TERPS** - Terminal Instrument Procedures  
**TO/GA** - Take Off/Go Around: operating mode  
**TRACON** - Terminal Radar Approach Control  
**TSO** - Technical Standard Order: performance specification and production compliance document issued by FAA

**TTG** - Time To Go  
**TTS** - Time To Station  
**TTW** - Time to Waypoint  
**Tu** - Tupolev Design Bureau  
**TURB** - Turbulence  
**TWDL** - Two-way Data Link

## **U**

**UDF** - Unducted Fan  
**UHF** - Ultra High Frequency: 300-3000 MHz

## **V**

**V/STOL** - Vertical/Short Takeoff and Landing  
**V1** - takeoff decision speed  
**V2** - minimum takeoff safety speed at 35'  
**VAC** - Volts, Alternating Current  
**VALFAC** - Validation Facility: avionics test and simulation facility\*  
**VASI** - Visual Approach Slope Indicator  
**VDC** - Volts, Direct Current  
**VDGS** - Visual Docking Guidance System (Airport Systems)  
**VDL** - VHF Data Link  
**VDR** - VHF Data Radio  
**VFE** - maximum flap extended speed  
**VFR** - Visual Flight Rules (see VMC)  
**VG/DG** - Vertical Gyro/Directional Gyro  
**VG** - Vertical Gyro  
**VHF** - Very High Frequency: 30-300 MHz -- "straight-line" signal used for communications and navigation  
**VHSIC** - Very High Speed Integrated Circuit  
**VIA** - Versatile Integrated Avionics -- offshoot of Integrated Modular Avionics  
**VLF** - Very Low Frequency: 3 KHz-30 KHz -- used for long range navigation in combination with Omega  
**VLSIC** - Very Large Scale Integrated Circuit  
**VMC** - Visual Meteorological Conditions (see VFR)  
**VNAV** - Vertical Navigation  
**VNE** - never-exceed speed  
**VNO** - maximum structural cruising speed  
**VOR** - VHF Omnidirectional Range  
**VORTAC** - Combined VOR and Tacan system  
**VR** - rotation speed  
**VREF** - approach reference speed  
**VSI** - Vertical Speed Indicator  
**VSI/TRA** - Vertical Speed Indicator/Traffic, Resolution Advisory

## **W**

**WAAS** - Wide area augmentation system

**WBS** - Weight and Balance System\*

**WORM** - Write-Once/Read Many: optical disk technology

**WPT** - waypoint

**WS** - Windshear\*

**WX** - Weather

**WXR** - Weather Radar

## **X**

**XPDR** - Transponder

**X/WIND** – crosswind

## **Y**

## **Z**

**Z** - zillion: 1 X 10z or 10 jillion

- unit of sleep